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ABSTRACT

Federal legislation ensures that children with physical disabilities should not be denied access to the school library. These children have the same information needs as their peers, and they want equal access to information in the school library media center. To create an accessible and functional school library, many requirements and considerations must be incorporated into this facility's early design phases. This paper establishes a checklist of considerations for library media center design for physically disabled young people by searching and analyzing research literature of the mid-1970s to the present. The checklist presents the following essential points: establishing a design planning committee, being knowledgeable about the school philosophy and building standards, developing a timetable for discussion and development of design specifications, examination of blue prints for specifications integration, and continued communication between the architect and planning committee from the first planning meeting to completion of the library media center building project. (14 references) (Author/MAB)

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LIBRARY MEDIA CENTER DESIGN CONSIDERATIONS FOR PHYSICALLY DISABLED STUDENTS

by

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of the requirements for

the M.L.S. degree

at

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Table of Contents

Abstract 1

Introduction 2-3

Statement of the Problem 3

Limitations of the Study 4

Definition of Terms 4

Research Design 4-5

Identification and Analysis of the Literature 5-17

Conclusion and Checklist 18-19

Endnotes 20-23

Works Cited 24-25

ABSTRACT

As a result of federal legislation, children with physical disabilities are one of the many groups of children who should not be denied access to the school library. These children have the same information needs as their peers. They want equal access to information in the school library media center. Creating an accessible and functional facility is a real problem in many schools in the United States. There are also problems in designing new school library media centers. Preplanning should take place in creating new facilities.

This paper establishes a checklist of considerations for library media center design for physically disabled young people by searching and analyzing research literature of the mid-1970's to the present. The checklist presents the following points that are essential: establishing design planning committee, being knowledgeable of the school philosophy and building standards, developing a timetable for discussion and development of design specifications, examination of blue prints for specifications integration and continued communication between architect and planning committee from the first planning meeting to completion of the library media center building project.

Introduction:

Today's school library media specialists encounter young people of all ability levels in the daily routine of their day in the school library media center. Besides average functioning children using the library media center, there are children who have mental, emotional, learning and physical limitations that are also utilizing library services. Children with disabilities are in our schools as a result of a concept called least restrictive environment. This concept, along with others like mainstreaming is a result of federal legislation created in the 1970's. According to PL 94-142, "education is a fundamental right of all children whether or not they are disabled."[1] While the school library media center is not specifically stated in the legislation, it can be considered a "related service" just like art or music as stated in PL 94-142.[2] Objectives for developing information skills can be incorporated into a plan called the Individual Educational Plan (IEP). This plan is required according to PL 94-142 for children who are diagnosed with a disability.

Another piece of federal legislation of the 1970's has implications for school library media center services. Section 504 of the Rehabilitation Act of 1973 (PL 93-112) specifies "that programs which are supported by Federal funds must be accessible to all regardless of disability."[3] This law goes further in acquiring accessibility to facilities for disabled people than the 1968 Architectural Barriers Act. The results of PL 93-112 are important to library services in schools for young people with physical disabilities. This law "helps to insure that library service is available to disabled children even though such service is not specified in PL 94-142."[4]

To many media specialists and school administrators, the application of these laws in the school media center is a real challenge. It forces schools to examine the physical design of their library media center for accessibility for children with physical disabilities.

For some schools, the mandates of the legislation are easily incorporated into the school media program. In one local elementary school media center, for example, these needs were acknowledged when the center was designed two years ago. Examples of this are: staff help is available on request by physically disabled students; wide aisles allow students, using mobility

aids, to find materials on their own. Absence of stairs in the center enable students to move freely without fear of falling.[5]

For other school media centers, trying to achieve accessibility for young people with physical disabilities through the physical design of the media center is a real problem. Daniel Callison and Jacqueline Morris describe a situation in a school library where materials are not accessible to students with physical disabilities.[6] The reference materials are on the second floor. Because of stairs and small doorways, students in wheelchairs cannot have access to the materials. They observe that structural changes are costly, but necessary if open access to materials for all students is the school goal and also mandated by law. This case illustrates the challenge of existing schools trying to follow the mandates of the federal law.

In summary, all children have the same information needs. The children with physical disabilities are no different than their peers when it comes to defining their information needs. They want to be independent and self-sufficient information users and consumers too. Like their peers, a friendly and intellectually challenging and accessible physical environment is what they seek in the school library media center. Sr. Doris Batt expands this idea with the following:

> The hub of education often centers around the library. It is the information center of the school and as such must be available to every student.[7]

Statement of the Problem:

The purpose of this paper was to examine the literature to determine the most significant points concerning library design for physically disabled students and create a checklist of suggested design considerations to assist media specialists, school administrators, parents, staff and architects in designing an accessible school library media center that meets the information needs of young people with physical disabilities.

Limitations of the Study:

The literature examined for analysis was limited to the items uncovered by the search procedures outlined in the research design section. Prior to passage of federal legislation, there was very little published literature on library design for the physically disabled. Since the passage of federal laws, in the 1970's, which affected disabled individuals, there has been more literature written on library services and design for physically disabled individuals. Therefore, the literature search was confined to research of the mid-1970's to the present.

Definition of Terms:

The following are definitions of special education terminology that are referred to in this seminar paper.

Physical Disabilities:

"Physical disabilities fall into three basic anatomical categories: those involving the skeletal structure, the muscular system, and the neuromuscular system. Special health problems are also included among the physical disability groupings."[8]

Least restrictive environment:

"Least restrictive environment refers to educating the handicapped with the non-handicapped to the maximum extent appropriate."[9]

Mainstreaming:

Mainstreaming is an educational practice of "full integration into the regular classroom" under certain circumstances to meet the instructional needs of some handicapped children.[10]

Signage:

Signage involves the creation of signs that use color coding, symbols or pictures to communicate information.

Research Design:

ERIC and Library Literature were utilized to search for articles and books on school library media design considerations for the physically disabled. General library design concepts for

library media centers is one group of research literature. Some of the literature deals with the broad topic of disabled young people and library services. This literature presents general philosophies and guidelines for library design for the overall disabled population in school library media centers. Other texts specifically address library services for the physically disabled. Library design for the physically disabled is one of the many topics discussed in these books.

This paper presents the main points of each group of research findings. All three groups were examined to tabulate considerations about library design for the physically disabled. A checklist of design considerations was the result of the analyses.

Identification and Analysis of the Literature:

General Library Design Literature

In "School Media Center Architectural Requirements," Paul Briggs describes how the Cleveland Public Schools developed their library design considerations for their school library media centers.[11] Philosophically, the school district feels strongly about good school library media centers. The design of the school should reflect these ideas. Since the whole school community is using the media center, it is important that the library specifications committee include members of the administration and teaching staff as well as the library media staff. This committee determines the educational specifications that will be given to the architect to incorporate into the library media center design. According to Briggs, the mission of the committee is the following:

> It identifies the educational concerns and educational needs that the media center, as part of the school facility, must fulfill.[12]

The Cleveland School District looks closely at other factors that need to be considered in designing a library media center. It is important to create a learning environment that all children can use. They need a place that is "conductive to learning activities."[13] Flexibility, in the way that space is used, is another important element to consider in designing a library media center. Children will be engaging in a variety of activities in the media center. Some of these activities are

large or small group and individual projects. The physical space should adapt to the variety of these activities. The space should be designed so that it is "childlike and full of warmth."[14]

Finally, the design of the school library media center should be aesthetically pleasing to the eye as well as functional.

Briggs concludes with a checklist of design principles that the Cleveland Public Schools developed for their own present and future library designing needs. Accessibility, space for different activities, good traffic flow and child oriented environment are the main design principles of the checklist.[15] These elements in conjunction with staff and students, help to create a harmonious and functional library learning environment that is "the heart of the school."[16]

General guidelines, for library design, are also discussed in detail by Elizabeth Hoffman in "Ten Commandments for Media Center Planners."[17] The Pennsylvania Division of School Library Services developed these guidelines for media center planners. These guidelines are based on the philosophy "that a school media center is a learning laboratory where the use of all resources, print and non-print, is purposeful, planned and integrated with the teaching and learning program to widen, deepen, intensify and individualize the educational experience"[18]. Hoffman points out that creating a library media center, based on this philosophy, is "not an easy task."[19]

To assist media specialists, staff and administration in library design work, she suggests some considerations to use in designing the library media center.

It is important that designers know about the school's educational program. The design of the media center reflects these as well as the present educational program goals. The function of the facility determines the physical form of the facility. A media center can be designed to be aesthetically pleasing without sacrificing functionality. A competent architect understands this concept and uses his or her creativity to design a functional library media center that is also aesthetically attractive. A well designed media center utilizes quality materials in its physical structure. Equipment and materials placed in the center should meet quality standards and should meet specific program needs.

Hoffman stresses the importance of involvement of the staff, and media specialist in designing the media center with the architect. By doing this, these people can advise the architect about the need for visibility, accessibility, "economy of space" and ample materials and facilities.[20]

The author concludes with the final suggested guideline that "is one of the most frequently ignored."[21] Library media centers need to be expandable to accommodate growing collections and programs. One wall of the library media center "should be removable so that future growth and expansion will be possible without relocation of the facility."[22] Moving to a less desirable place is avoided by following this guideline.

Hoffman summarizes this discussion of suggested guidelines developed through trial and error and working with uninformed architects and administration, by stressing that guidelines are essential in designing a library media center. She concludes her discussion with the following:

> One well planned functional, aesthetic media center serviced by a competent staff can improve the quality of an entire school program.[23]

Both Hoffman and Briggs emphasize similar guidelines to consider when designing a library media center of a school. When a media center design committee knows the school program goals, they can create library design specifications that meet those instructional needs. Both authors agree on involvement of the school community in creating considerations that the architect will use in developing his or her blue prints for the library media center. They both stress the need for quality of design, functionality and accessibility as necessary elements to incorporate into the physical design of the media center. They concur that the physical design of a library media center can be functional and still be "attractive, interesting and inviting places."[24]

In conclusion, they both hope that their suggested guidelines will help other schools in creating effective and functional media center for young people of all ability levels in school environments.

Library Design and the General Disabled Population Literature:

The first example of this research literature on library design can be found in Linda Lucas and Marilyn H. Karrenbrock's book, The Disabled Child in the Library: Moving into the Mainstream.[25] In their research, they offer basic overall considerations that the school library media center planners should think about when creating a media center for young people with disabilities. According to the authors, the planners should remember that the majority of students in a school are either speech, mentally or emotionally impaired or have a learning disability while only a small percent (10%) are physically impaired.[26] The authors suggest designing a physical environment that is "barrier free" for young people of all disabilities.[27]

With this philosophy in mind, the authors describe the design planning process for the library media center for disabled young people. Involving the parents of disabled students and disabled students in the planning of the media center is logical because they are consumers of the school library media services along with other students, parents and faculty.

Lucas and Karrenbrock articulate a very practical reason for their involvement in the following:

> Their unique insights can save planners from making serious and costly design errors. These people are the best sources of information about special equipment or devices which the children use.[28]

Parental involvement in the planning of the physical design of the media center gives the architect a new perspective on library design that is based on parental observations of how their children use their physical environment and materials. Their observations would enable architects and media specialists to look at the physical design of the library media center in ways that under normal circumstances would not be considered by non-physically challenged persons. Input by parents and physically challenged children would add a realistic and creative element to the designing of the school library media center that non-disabled children could derive tangible benefits.

A second main point that Lucas and Karrenbrock cite is the importance of establishing places in the library media center for rest and relaxation. Compared to non-disabled children, disabled children are more susceptible to infection and illness especially children with chronic illnesses and who are easily fatigued.[29] It is important that the library media center provide a clean and restful area where they can be away from high energy activities for a period of time.

A third consideration that the authors cite for library design for disabled children is "that children function best in consistent, predictable environments."[30] Traffic flow in the media center should have a definite pattern. Sudden changes caused by unnecessary clutter is unnerving to children with disabilities. In some cases, it can cause physical harm. These traffic lanes "must be wider than they would for non-disabled children."[31] Open areas should be defined using tactile materials especially for visually disabled children. According to Lucas and Karrenbrock, areas that will involve high level of activity, "should be clearly defined."[32] It is not appropriate to have quiet areas right next to high activity level areas.

The flooring, in all these areas, in the library media center, should be safe and level. In some cases, carpeting is appropriate because it absorbs distracting noises. Carpet squares are helpful for children who have difficulty with sitting on the floor.

Other major considerations in library design are furniture, lighting, acoustics, climate control, signage and safety.[33]

Furniture must be sturdy and of good quality. The authors recommend Ruth Hoffman's book, How to Build Special Furniture and Equipment for Handicapped Children (1970) as a resource for media center designers when discussing furniture requirements for the media center.[34]

Lighting is very important especially for hearing and visually impaired children. For the hearing impaired, acoustics are also very important. These are more difficult to adjust becasue of the varying sound requirements for different kinds of disabilities. It should be remembered that furniture and flooring materials effect acoustics.

Climate control is important to all children but especially important to some groups of disabled children. The authors observe that controlling the indoor climate "can increase the chance that children stay healthy."[35]

Signage is another consideration in the library design for children of all disabilities. Picture symbols are used instead of words and numbers to "identify Dewey classes in the stacks."[36] Other examples of signage are "braille signs" and "tactile maps."[37] These signs should be consistently located throughout the media center and at the level that a child can touch it.

Finally, safety in the media center is an essential consideration in effective library designing for all children but especially for children with disabilities. A complete orientation to the media center will help children with disabilities feel comfortable and knowledgeable about the location of materials, equipment and activity areas. Orientation should also involve what to do in emergency situations. Knowing emergency procedures and location of clearly marked and clutter free exits and traffic patterns will relieve feelings of anxiety and panic that accompanies emergency situations for children with disabilities.[38]

Lucas and Karrenbrock present a unique approach to considerations for library design for children with disabilities. Media center planners must consider "environmental barriers which exist for children with all types of disabilities."[39] Media specialist, staff, parents and architect need to focus on the needs of the children in their school. With the incorporation of the national standards for building design and the specifications created by the media center planning committee, the media center becomes a quality learning environment.

Margaret Marshall is a second example of an author of research literature on library service and children with disabilities. In her book, Libraries and the Handicapped Child, she discusses the issue of library design in relation to children with disabilities.[40] The purpose of her discussion is to point out to the reader certain considerations that are not discussed in other library design literature. Reading aids for children with disabilities are important inside and outside the library. Some of these reading aids for the library are the following: 1) Typewriters, 2) Microprocessors,

3) Teleprinters, 4) Visual systems, 5) Print reading systems, 6) Braille systems, 7) Speech aids, 8) Recording and playback items, 9) Page turners, 10) Bookrests.[41]

Many of these items have attachments for different handicapping conditions. Marshall points out that even if a school library cannot afford these items, media specialists should know that they exist.

The author also lists and describes libraries in the Western Hemisphere that are presently operating and meeting needs of disabled persons. One example is the Alabama Regional Library for the Blind and Physically Handicapped that has "handrails to guide users to automatic sliding doors, raised tactile maps of the interior, a teletypewriter service, and makes use of sign language."[42]

Besides reading aids, Marshall discusses in general terms, considerations that Lucas and Karrenbrock elaborated on in their research literature. These similar considerations were flooring, lighting, accessibility and safety. It is the equipment consideration that Marshall emphasizes. She stresses that in considering reading aid equipment purchases for the physical environment of the library, media center planners should buy equipment that "can translate the printed work into a form accessible to those who cannot read print."[43] Therefore, the physical design of the library media center must accommodate these special equipment needs.

A third author of research literature on library design and children with disabilities is Joyce Petrie. This author views the media center as another mainstreaming environment for children with disabilities along with the classroom environment. Children with disabilities need access into the media center as well as inside the media center. Petrie lists important things to think about when evaluating the media center's physical design. Examples of considerations are the following:

-Traffic areas should be free of obstacles which restrict movement, such as trash containers, sculptures, furniture, plants, displays or equipment.

-Doors should be all the way open or all the way shut.

-Equipment should be stored for easy access, transport (carts for large or cumbersome pieces) and usage.

-Floors should not be slippery.[44]

Along with this list, Petrie elaborates on other considerations for media center design for children with disabilities. Because of the many needs of students, the library design should be flexible and allow media center users to alter it in order to accommodate the many kinds of activities that users would engage in in the library media center. For example, students could partition large areas of floor space with room dividers for privacy for small group or large group activities.

Besides discussing lighting, noise, furnishings, signs and temperature considerations, Petrie talks about the importance of color, plants, windows, displays and pets in library design. Color in the library media center affects lighting. In some situations, the color white could negatively affect vision. Plants can create a friendly atmosphere and be incorporated into the media center activities. Windows can provide natural sunlight and access to the outside world. Through the use of shades, unnecessary glare can be controlled. Windows should be at the eye level of students. Displays can be pleasing to the eye as well as learning oriented. They are most beneficial when they are tactile oriented for students. An area for pets should be considered in the library design. They help students develop an understanding of the biological sciences and help develop responsibility in children. Students can assist in the care of the pets.

While Petrie describes many of the general library design considerations of the other research authors, she emphasizes equipment considerations inside the media center for children with disabilities. Petrie believes in making the "media center facility physically accessible to disabled students and its environment inviting and stimulating."[45]

A fourth and final example of research literature on library design and children with disabilities is found in the text, The Special Child in the Library by Barbara Holland Baskin and Karen H. Harris.[46] This text is one of the earliest texts that presents editors' comments and articles from other researchers on all aspects of library services for children with disabilities. Baskin and Harris explain that eliminating barriers in the media center should be done in a respectful, subtle way. Everything should be done in the physical design to make children feel

comfortable and not be alienated from their peers. They recommend that the media center "should be examined for its potential in providing enriching, expanding and stimulating experiences."[47]

These authors strongly advocate that librarians assert themselves when it comes to library design planning. In doing this, the rest of the school community will come to realize the importance of the library media center in the instructional life of all the children in the elementary school especially the children with disabilities.

In conclusion, all of these research authors stress many of the same considerations for library media center design for children with disabilities. They all point out the importance of considering the needs of the students as primary when developing design specifications for the library media center. Planning involves a variety of people in the school community because they are consumers of its services. The physical environment should be safe and flexible to accommodate the wide variety of activities that the media center provides. There needs to be accommodation for a variety of equipment and furniture in the library design. These things should be purchased with the needs of the students in mind and not just for display. The physical environment of the design should encourage students to interact with each other in a constructive and comfortable manner. The considerations for the library media center design should enable the library media center planning team to create a physical setting for children of all disabilities "in terms of its potential as an active facilitating agent in the educational process."[48]

Library Design and the Physically Disabled Literature:

Ruth Velleman is a library services author who focuses her research on library services for the physically disabled. Serving Physically Disabled People: An Information Handbook for All Libraries and "Library Adaptations for the Handicapped" are examples of her published work on this important topic.[49,50]

In her first work, she discusses the availability of literature like the ANSI standards, that state specific ways in which a facility like the school library media center can be modified for persons that are physically disabled. She provides some basic "standards for barrier free design" in her text.[51] Many of these standards come from the ANSI Standards manual and other

guidelines manuals. These standards cited in Velleman's book help the school media center planners by providing information on areas that need to be considered in relation to the physical design of the center. These areas are the following:

1. General information, which is necessary for all public buildings such as wheelchair curb cuts, parking areas, ramps, door widths and thresholds, restroom, telephones and elevators and corridor widths and floor space and
2. Specific requirements for libraries including stack widths, reference tables and carrel heights and optimum heights for circulation desks and card catalogs.[52]

Examples of design standards in regards to the library media center that Velleman cites in her text are:

-A minimum width of 60 inches is required for two individuals in wheelchairs to pass each other.

-A four (4) foot square platform is needed wherever there is a change of direction on a ramp since it is very difficult to turn a wheelchair on a ramp slope.

-Raised letters and numbers to identify offices and read rooms or stacks should be placed conveniently at about five (5) foot height for the use of blind persons.[53]

In her published works, Velleman talks about the value of adaptations in school libraries. Because of the advanced age of many established elementary schools in the United States, many of them require modification to make them accessible to children with physical disabilities. Through explaining in detail the library adaptations implemented in one school, Velleman points out that "disabled children do not need extensive adaptation of the normal environment in order to function successfully."[54] The important modifications are for students who operate wheelchairs and who want a library environment that encourages them to function independently. In her description of this school library, she explains the adaptations incorporated into the general facility which includes shelving, furniture, storage and temperature. Other aspects of the library that required alteration were the card catalog and the student assistance system.

In this library, the card catalog is place on "a special 16 inch high base."[55] This arrangement makes this important piece of equipment accessible to students in wheelchairs. Velleman describes the method of teaming two students, who use wheelchairs to work on research projects using a card catalog drawer at a table. This procedure reduces congestion of wheelchairs at the card catalog station.

In conclusion, Velleman emphasizes the value of the standards manuals in creating the library media center design for children with physical disabilities. Her published work emphasizes that with minimal adaptations, common sense and standards, the media center planners can create a media center that is an accessible learning environment for children who are physically disabled.[56]

The second and final example of research literature on considerations for library media center design for physically disabled children comes from the American National Standards Institute's (ANSI) book titled, American National Standard Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.[57] Even though these guidelines do not specifically talk about the school library media center or any library, these specifications can be utilized by media center planners "to provide architectural accessibility."[58] In the ANSI manual, the Institute states that the purpose of these specifications are to provide structural specifications to make buildings accessible to persons with a wide range of physical disabilities.[59] While these specifications are primarily oriented to physically disabled adults, the Institute recommends that schools make appropriate adjustments for children.[60] There is a glossary of terms in the manual as well as diagrams throughout the manual that depict in picture form the ANSI specifications for designing an accessible public facility for persons with physical disabilities. These specifications apply to newly designed public buildings as well as remodeled structures or "permanent, temporary and emergency buildings."[61] The intent of the specifications is that they are to be used in government funded agencies. Private agencies can use these specifications to make their agency building accessible to physically handicapped persons. These guidelines address many aspects of library design that media center planners need to consider in their elementary school library media center for physically disabled children. Minimum

accessibility requirements are one part of the specifications. Examples of them that a library media center planners could consult for their media center design are the following:

1. Space Allowances and Reach Space (ANSI 4.2)
2. Ground and Floor surfaces (ANSI 4.5)
3. Windows (ANSI 4.12)
4. Entrances (ANSI 4.14)
5. Toilet Rooms (ANSI 4.22)
6. Storage (ANSI 4.25)
7. Signage (ANSI 4.30)
8. Seating, Tables, and Work Surfaces (ANSI 4.32)
9. Assembly Areas (ANSI 4.33).[62]

There is additional information in the appendix of the manual on space considerations for people using mobility aids. These aids include canes as well as wheelchairs.[63]

Besides the ANSI manual, there are other guideline manuals available for media center planners to consult in developing their own specifications for their library media center for children with physical disabilities. Some of these manuals are listed along with bibliographic information in the text, Librarians Serving Disabled Children and Young People by Henry C. Dequin.[64] Dequin includes the ANSI manual in the list along with publications from the American Library Association, National Library Service for the Blind and Physically Handicapped and author, Michael A. Jones.[65]

In conclusion, the specifications from ANSI and other manuals can assist the library design planners with precise information that can be incorporated into specifications for any school library media center for children with physical disabilities. These adult oriented guidelines can be altered to meet the needs of children with physical limitations. Specifications like ANSI encourage planners to "adjust dimensions and other provisions to make them suitable for children."[66] Velleman adds that specifications can "be incorporated into any traditional library."[67]

Effective library media design planners consider specifications manuals as valuable tools for designing school library media centers. They know that these specifications with appropriate modifications can help to create a media center where children with physical disabilities can have maximum accessibility and become self-sufficient information specialists.

Conclusion and Checklist:

There was a general consensus of opinion among the researcher authors on many library design considerations. Repetition of these points consistently throughout the research literature was evidence of this fact. Some of the researchers like Barbara Holland Baskin and Karen H. Harris and Ruth Velleman were names that appeared frequently in the research literature.

The main points of the literature were tabulated into a checklist. The considerations in the checklist were presented in the order that they should chronologically be applied in a school situation. The order of the checklist enabled people to accomplish the task of library design in a logical sequence.

Library Design Considerations for Physically Disabled Students Checklist:

1. Establish a design planning committee consisting of the school principal, media specialist, architect, one or two parents who have disabled children and one or two teachers.
2. Provide committee members with copies of school programming philosophy and standards manuals.
3. At the first meeting, establish a timetable for discussing concerns, examining standards manual and school educational philosophy curriculum and teaching practices. Agree to communicate till completion of building project.
4. Design specifications, based on previous discussion, that the architect can integrate into his/her blue prints of the library media center.
5. When examining the blue prints, look for the following:
   - -has the architect integrated the specifications that the committee recommended?
   - -is the library design in harmony with the general school design?
   - -where is the library in relation to the rest of the school?
   - -are the entrances, exits, bathrooms designed according to ANSI standards?

-if needed, are ramps and elevators incorporated into the design according to ANSI standards?

-is floor space designed to accommodate a variety of activities?

-does this design make space accessible around the stacks and work areas like the card catalog?

-is there a defined traffic pattern that is manageable for staff and students?

-have lighting, temperature, acoustics, furniture and equipment standards indicated in the design?

-does the design reflect an aesthetically pleasing environment as well as functional environment for students?

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